THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

CELLULAR COMMUNICATIONS EQUIPMENT LLC,	§ § §	
v.	§ §	CASE NO. 2:15-CV-576-RWS-RSP
AT&T, INC., et al.	§ § §	

CLAIM CONSTRUCTION
MEMORANDUM AND ORDER

On November 29, 2016, the Court held a hearing to determine the proper construction of

disputed claim terms in United States Patents No. 8,457,022, 8,457,676, 8,570,957, 8,867,472,

9,025,590, and 9,078,262. Having reviewed the arguments made by the parties at the hearing

and in their claim construction briefing (Dkt. Nos. 253, 265, 269, 270-1, 278, 303, 306 & 307),[1]

having considered the intrinsic evidence, and having made subsidiary factual findings about the

extrinsic evidence, the Court hereby issues this Claim Construction Memorandum and Order.

See Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v.*

Sandoz, Inc., 135 S. Ct. 831, 841 (2015).

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[1] Citations to documents (such as the parties' briefs and exhibits) in this Claim Construction Memorandum and Order refer to the page numbers of the original documents rather than the page numbers assigned by the Court's electronic docket unless otherwise indicated.

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I. BACKGROUND

Plaintiff has alleged infringement of United States Patents No. 8,457,022 ("the '022 Patent"), 8,457,676 ("the '676 Patent"), 8,570,957 ("the '957 Patent"), 8,867,472 ("the '472 Patent"), 9,025,590 ("the '590 Patent"), and 9,078,262 ("the '262 Patent") (collectively, the "patents-in-suit"). Plaintiff submits that the patents-in-suit relate to wireless communications, such as LTE cellular wireless standards. Dkt. No. 253 at 1.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties' arguments and facilitating discussion. Those preliminary constructions are set forth below within the discussion for each term.

II. LEGAL PRINCIPLES

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). "In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (citation omitted). "In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the 'evidentiary

underpinnings' of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal." *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312-13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314-15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979 (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am.*

Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex*, 299 F.3d at 1325. But, "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent."). "[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too

broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly,

expert testimony may aid a court in understanding the underlying technology and determining

the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported

assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic

evidence is "less reliable than the patent and its prosecution history in determining how to read

claim terms." *Id.*

The Supreme Court of the United States has "read [35 U.S.C.] § 112, ¶ 2 to require that a

patent's claims, viewed in light of the specification and prosecution history, inform those skilled

in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig*

Instruments, Inc., 134 S. Ct. 2120, 2129 (2014). "A determination of claim indefiniteness is a

legal conclusion that is drawn from the court's performance of its duty as the construer of patent

claims." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005)

(citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus,* 134

S. Ct. 2120.

III. THE PARTIES' STIPULATED TERMS

The parties reached agreement on constructions as stated in their August 8, 2016 Joint

Claim Construction and Prehearing Statement (Dkt. No. 209). Those agreements are set forth in

Appendix A to the present Claim Construction Memorandum and Order.

IV. CONSTRUCTION OF DISPUTED TERMS

The parties' briefs present different orderings of the disputed terms. Rather than attempt

to divine an ideal ordering for the disputed terms, the Court adopts the ordering presented by

Plaintiff.

A. "radio network resources" ('957 Patent, Claims 4, 10)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning. No construction necessary. Alternatively: "resources of a radio network that can be allocated, managed, scheduled, and/or assigned"	"resource blocks"

Dkt. No. 209, Ex. A at 3; *id.*, Ex. B at 2; Dkt. No. 275, Ex. A at 7 & 10.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "Plain meaning."

(1) The Parties' Positions

Plaintiff argues that "[t]he Court should reject [Defendants'] attempt to limit the claims to

a singular embodiment of the invention." Dkt. No. 253 at 6.

Defendants respond that "the specification repeatedly distinguishes between resource

allocation (*i.e.*, allocating resource blocks) and the management of other parameters/settings."

Dkt. No. 265 at 6.

Plaintiff replies that this term is easily understood by a person of ordinary skill in the art,

and "[t]he patentee did not act as its own lexicographer for this term, nor did the patentee

disavow the full scope of the claim term either in the specification or during prosecution." Dkt.

No. 269 at 1.

The parties have submitted this disputed term on the briefing, without oral argument.

(2) Analysis

Claim 4 of the '957 Patent, for example, recites (emphasis added):

4. An apparatus, comprising:

a receiver configured to receive a power headroom report;

a processor configured to allocate *radio network resources* based on the power headroom report,

wherein the processor is configured to obtain both positive and negative values of power headroom from the power headroom report, as applicable, in which negative values indicate the missing power in dB to fulfill transmission requirements,

wherein the processor is configured to allocate additional *radio network resources* to a user equipment when the power headroom indicates positive headroom, when applicable, and to allocate fewer *radio network resources* to the user equipment when the power headroom report indicates negative headroom.

The claim thus does not specify any particular type of resources. Likewise, the specification does not limit the claim scope to "resource blocks" (RBs), which are only one disclosed example. *See, e.g.,* '957 Patent at 3:16-18, 3:36-46, 3:59-60 ("a resource block (RB) is the smallest time/frequency unit that can be assigned by the scheduler"); 4:1-15, 4:37-39, 5:24-39, 6:4-12, 6:61-7:4, 7:29-32, 7:55-59, 8:31-35 & 8:51-54. For example, the specification discloses:

In certain embodiments of the present invention, the power headroom reporting is extended to both directions, e.g. reporting (a) positive headroom if the current transmit power is lower than the nominal maximum transmission power and (b) negative headroom if the required transmit power according to the allocation scheme in terms of number of RBs as well as selected modulation and coding scheme requires higher power than the nominal maximum transmit power.

Id. at 5:16-23; *see id.* at 6:37-39. Of note, this disclosure refers to "allocation" in the context of RBs as well as modulation and coding. *See id.* at 5:16-23; *see also id.* at 5:59-6:3. Further, even if this passage were interpreted as referring to allocation of only RBs, this is a specific feature of particular disclosed embodiments that should not be imported into the claims. *See Phillips*, 415 F.3d at 1323.

Therefore, the Court hereby expressly rejects Defendants' proposed construction. No further construction is necessary. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and

technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("[D]istrict courts are not (and should not be) required to construe every limitation present in a patent's asserted claims."); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) ("Unlike *O2 Micro*, where the court failed to resolve the parties' quarrel, the district court rejected Defendants' construction."); *ActiveVideo Networks, Inc. v. Verizon Commcn's, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012); *Summit 6, LLC v. Samsung Elecs. Co., Ltd*., 802 F.3d 1283, 1291 (Fed. Cir. 2015).

Therefore, the Court hereby construes **"radio network resources"** to have its **plain meaning**.

B. "subtracting the nominal maximum transmission power and the power that the apparatus would use if it did not apply maximum power limitations" ('957 Patent, Claims 1, 7)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
"subtracting from the nominal maximum transmission power the power that the apparatus would use if it did not apply maximum power limitations"	Indefinite

Dkt. No. 209, Ex. A at 4; *id.*, Ex. B at 3; Dkt. No. 275, Ex. A at 6 & 8.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties with the following preliminary construction: "subtracting from the nominal maximum transmission power the power that the apparatus would use if it did not apply maximum power limitations."

(1) The Parties' Positions

Plaintiff argues that "[i]n view of the indisputable clarity provided by the '957 patent

specification and prosecution history, [Plaintiff's] proposed construction of the 'subtracting'

limitation is the only reasonable interpretation and should be adopted." Dkt. No. 270-1 at 9.

Defendants respond that "[f]rom the claim language and the specification, it is unclear

which term must be subtracted from the other, if either, or whether the two terms are subtracted

from some third term." Dkt. No. 265 at 10-11; *see* Dkt. No. 303 at 3-4.

Plaintiff replies that "Defendants ignore the explicit references in the specification and

the prosecution history that both define the calculation of power headroom and tie that

calculation directly to the recitation of the 'subtracting' limitation in the claims." Dkt. No. 269

at 2.

In sur-reply, Defendants argue that "nowhere in the claims, specification, or prosecution

history of the '957 patent did the patentee *define* the ways to calculate headroom." Dkt. No. 278

at 2.

At the November 29, 2016 hearing, Defendants argued that the prosecution history cited

by Plaintiff does not rise to the level of a lexicography and does not override the language of the

claims.

(2) Analysis

Claim 1 of the '957 Patent, for example, recites (emphasis added):

1. An apparatus, comprising:
        a processor configured to determine a power headroom report; and
        a transmitter configured to transmit the headroom report,
        wherein the processor is configured to determine the power headroom
report with both positive and negative values of power headroom, as applicable,
in which negative values indicate the missing power in dB to fulfill transmission
requirements, and

> wherein the processor is configured to determine the power headroom by *subtracting the nominal maximum transmission power and the power that the apparatus would use if it did not apply maximum power limitations*, wherein the result of said subtracting is not limited to zero and positive values.

The disputed term thus requires subtraction but does not itself specify the subtraction relationship.

At first blush, Plaintiff's proposed construction appears to amount to a significant re-writing by specifying a relationship that does not appear in the claim language. *See, e.g, Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (stating that courts "construe the claim as written, not as the patentees wish they had written it"). Indeed, the claim itself specifies obtaining not merely a difference value but rather either a positive or negative value. Although the specification discloses examples, the specification sets forth no definition or clear explanation. *See* '957 Patent at 3:32-35 & 4:16-19; *see also Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1374 (Fed. Cir. 2014) ("a person of ordinary skill in the art would not understand the 'e.g.' phrase to constitute an exclusive definition")

During prosecution, however, the patentee associated the disputed term with a subtraction relationship in which one term (the power that the apparatus would use if it did not apply maximum power limitations) is subtracted from another term (the nominal maximum transmission power):

> [O]ne difference between certain embodiments of the claimed application and [the] 3GPP Meeting [reference] is in the way the PH [(power headroom)] is defined and calculated. In certain embodiments of the claimed invention, the PH is calculated as Pmax – "nominal allocated" power, calculated on a TTI [(transmission time interval)] basis. This can be seen, for example, in the recitations "wherein the processor is configured to determine the power headroom by subtracting the nominal maximum transmission power and the power that the apparatus would use if it did not apply maximum power limitations, wherein the result of said subtracting is not limited to zero and positive values" (claim 1).

Dkt. No. 253-8, June 20, 2013 Response Under 37 CFR § 1.111 at 12-13 (CCE576-000854-55).

Although this prosecution history refers to "certain embodiments," the patentee explicitly

referred to the disputed term. *Id.* In other words, although the patentee implied that there may

be other embodiments, the patentee used the claim language here at issue in a particular manner

as set forth in the above-quoted prosecution history. This finding is also consistent with the

above-quoted recital, in claim 1 of the '957 Patent, that "negative values indicate the missing

power in dB to fulfill transmission requirements."

Therefore, the Court hereby construes **"subtracting the nominal maximum**

transmission power and the power that the apparatus would use if it did not apply

maximum power limitations" to mean **"subtracting from the nominal maximum**

transmission power the power that the apparatus would use if it did not apply maximum

power limitations."

C. "when applicable" ('957 Patent, Claims 4, 10)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning. No construction necessary. Alternatively: "when available"	Indefinite

Dkt. No. 209, Ex. A at 4; *id.*, Ex. B at 2; Dkt. No. 275, Ex. A at 7 & 10.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "Indefinite."

(1) The Parties' Positions

Plaintiff argues that "[b]ecause the claim limitation requires allocating additional radio

network resources, one of ordinary skill in the art would understand that the qualification 'when

applicable' is included because the recited allocation cannot occur unless 'additional radio

network resources' are available." Dkt. No. 270-1 at 9; Dkt. No. 253 at 10; *see* Dkt. No. 307 at 2.

Defendants respond that "[n]o definition for 'when applicable' is provided in the claims or in the specification, nor is there any definitive indication of when this claim language would be met." Dkt. No. 265 at 9.

Plaintiff replies: "Defendants agree that 'applicable' has an ordinary meaning—i.e., 'relevant' or 'appropriate'—and that 'when applicable' would be understood as 'under certain circumstances.' This meaning that Defendants apply is consistent with the claim limitation and with [Plaintiff's] position that this limitation does not require construction." Dkt. No. 269 at 3.

In sur-reply, Defendants argue that whereas the parties agree that "additional radio network resources are allocated to a UE [(user equipment)] when the power headroom report indicates positive headroom *under certain circumstances*," "there are no criteria disclosed for discerning 'when' those circumstances have occurred." Dkt. No. 278 at 2.

At the November 29, 2016 hearing, Plaintiff argued that its alternative proposed construction does not render the disputed term superfluous because without it, Plaintiff argued, the claim might be interpreted as nonsensically requiring allocation of additional resources even if none are available.

(2) Analysis

Claim 4 of the '957 Patent, for example, recites (emphasis added):

4. An apparatus, comprising:
        a receiver configured to receive a power headroom report;
        a processor configured to allocate radio network resources based on the
power headroom report,
        wherein the processor is configured to obtain both positive and negative
values of power headroom from the power headroom report, as applicable, in
which negative values indicate the missing power in dB to fulfill transmission
requirements,

> wherein the processor is configured to allocate additional radio network resources to a user equipment when the power headroom indicates positive headroom, *when applicable*, and to allocate fewer radio network resources to the user equipment when the power headroom report indicates negative headroom.

The specification discloses that radio network resources are limited. *See, e.g.,* '957 Patent at 5:59-60 ("efficient utilization of the available resources") & 6:4-12.

Plaintiff's proposal of interpreting "when applicable" as meaning "when available," however, amounts to an improper re-writing of the claims. *See Chef Am.*, 358 F.3d at 1374 (stating that courts "construe the claim as written, not as the patentees wish they had written it"). Indeed, the specification does not use the terms "applicable" and "available" interchangeably. *Compare* '957 Patent at 3:43-46 & 5:35-39 *with id.* at 5:59-60. Likewise, Claim 4 of the '957 Patent recites "wherein the processor is configured to determine the power headroom report with both positive and negative values of power headroom, as applicable . . . ." Claim 10 of the '957 Patent recites a similar limitation. These limitations, which appear in the same claims here at issue as to the term "when applicable," thus use "applicable" to refer to what is appropriate rather than to what is available.

On balance, the term "when applicable" lacks any reasonably certain meaning in the context of the claims here at issue. *Nautilus*, 134 S. Ct. at 2129.

Therefore, the Court hereby finds that **"when applicable"** is **indefinite**.

D. '957 Patent, Claims 7-9

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Definite	Indefinite as improperly mixing method and apparatus elements in a single claim

Dkt. No. 209, Ex. A at 4; *id.*, Ex. B at 3; Dkt. No. 275, Ex. A at 8-9.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties with the following preliminary construction: "Indefinite (because 'the apparatus' lacks antecedent basis)."

(1) The Parties' Positions

Defendants argue that "[t]he scope of 'determining the power headroom by subtracting the nominal maximum transmission power and the power that the apparatus would use if it did not apply maximum power limitations' is unclear because 'the apparatus' is unidentified." Dkt. No. 265 at 16. Further, Defendants argue, "given the undefined nature of 'the apparatus,' claims 7-9 are indefinite for improperly mixing apparatus and method claims." *Id.* at 17.

Plaintiff replies that the recital of an "'apparatus' does not result in improper mixing of apparatus claim elements with the method claims" because it merely "specifies a measurement performed at the apparatus that is utilized in the calculation—i.e. the measurement used is 'the power that the apparatus would use if it did not apply maximum power limitations.'" Dkt. No. 269 at 3.

At the November 29, 2016 hearing, Plaintiff argued that the method must be performed in user equipment because there is no other possibility. Plaintiff concluded that "the apparatus" is therefore clear. Defendants responded that the specification discloses that a personal computer could be used instead of user equipment. *See* '957 Patent at 8:1-10.

(2) Analysis

The specification discloses:

> The power control headroom is the difference between the nominal maximum transmission power and the power at the UE [(user equipment)], e.g. the power that the UE would use if it did not apply maximum power limitations.

'957 Patent at 4:16-19. Claims 7-9 of the '957 Patent recite (emphasis added):

7. A method, comprising:
      determining a power headroom report; and
      transmitting the headroom report,
      wherein the determining comprises determining the power headroom report with both positive and negative values of power headroom, as applicable, in which negative values indicate the missing power in dB to fulfill transmission requirements, and
      wherein the determining comprises determining the power headroom by subtracting the nominal maximum transmission power and the power that *the apparatus* would use if it did not apply maximum power limitations, wherein the result of said subtracting is not limited to zero and positive values.

8. The method of claim 7, wherein the method is performed by a user equipment.

9. The method of claim 7, further comprising: configuring the power headroom report as a 6 bit report configured to identify a level selected from a range of +40 to –23 dB, in 1 dB steps.

The Court hereby expressly rejects Defendants' argument that these are improper mixed method-apparatus claims. *See, e.g., IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005); *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1374-75 (Fed. Cir. 2008).

Nonetheless, the term "the apparatus" in Claim 7 lacks antecedent basis. As a general matter, antecedent basis can be implicit rather than explicit. *See Energizer Holdings Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) (holding that "an anode gel comprised of zinc as the active anode component" provided implicit antecedent basis for "said zinc anode"); *see also Ex Parte Porter*, 25 U.S.P.Q. 2d (BNA) 1144, 1145 (B.P.A.I. 1992) ("The term 'the controlled fluid' . . . finds reasonable antecedent basis in the previously recited 'controlled stream of fluid . . . .'").

Here, however, Plaintiff has not demonstrated any implicit antecedent basis, in particular because Claim 7 recites transmission, presumably from one apparatus to another. Also, the claims do not specify whether "the apparatus" is an apparatus that is performing the recited

method. Likewise, although Claim 8 (quoted above) refers to the method being performed by user equipment, this does not necessarily limit "the apparatus" to being user equipment because Claim 7 does not recite that the method is performed by "the apparatus." *See also* '957 Patent at 8:1-10 ("Other implementations could be made, such as by substituting personal computers (PCs) for both the UE and the eNodeB."). Indeed, the doctrine of claim differentiation further supports Defendants' argument that the method of Claim 7 is not necessarily performed by user equipment. *See Phillips*, 415 F.3d at 1315 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim").

The term "the apparatus" in Claim 7 (and therefore also in Claims 8 and 9, which each depend from Claim 7) thus lacks necessary antecedent basis and also lacks reasonable clarity. *See Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) ("a claim could be indefinite if a term does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable"); *see also Nautilus*, 134 S. Ct. at 2130 ("[W]e read [35 U.S.C.] § 112, ¶ 2 to require that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.").

Therefore, the Court hereby finds that **"the apparatus" in Claims 7-9** is **indefinite**.

E. "one or more of the predetermined subframes" ('022 Patent, Claims 1, 6)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
"one or more predetermined subframes"	Indefinite for lack of antecedent basis. To the extent the Court determines that the claims are not indefinite for lack of antecedent basis, no construction is required.

Dkt. No. 209, Ex. A at 1; *id.*, Ex. B at 1; Dkt. No. 275, Ex. A at 1 & 2.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "Indefinite (because 'the predetermined subframes'

lacks antecedent basis)."

(1) The Parties' Positions

Plaintiff argues that "[t]here is no reasonable debate as to the correct meaning, and

therefore, the Court should correct this obvious clerical error." Dkt. No. 253 at 11; *see* Dkt.

No. 307 at 3.

Defendants respond that "the term 'the predetermined subframes' lacks

antecedent basis," and "[o]ne of ordinary skill in the art could not reasonably ascertain which

'predetermined subframes' are being referenced in the claims." Dkt. No. 265 at 7. Defendants

argue that the claim does not merely contain a clerical error because "[a]s issued, 'one or more of

the predetermined subframes' requires *multiple* (*i.e.*, two or more) predetermined subframes

from which one or more subframes are selected for exclusion." *Id.* at 8; *see* Dkt. No. 303 at 1-2.

Plaintiff replies that this term does not require multiple predetermined subframes because

the term recites "one or more." Dkt. No. 269 at 5. Plaintiff thus argues that "the scope of this

term is unchanged by [Plaintiff's] proposed construction." *Id.*

In sur-reply, Defendants argue that "these claims require excluding one or more of the

predetermined *subframes* (plural), whereas [Plaintiff's] proposed interpretation would arguably

cover cases in which multiple predetermined subframes (plural) do not exist." Dkt. No. 278 at 1.

(2) Analysis

Claim 1 of the '022 Patent, for example, recites (emphasis added):

1. A method comprising:
        detecting start of a system information message transmission window; and

assigning a redundancy version sequence at the start of the transmission window,

wherein the assignment includes excluding *one or more of the predetermined subframes* in even-numbered radio frames if the subframes are within the transmission window, and

wherein the assignment includes excluding uplink subframes and multi-cast subframes, and

wherein the assignment ensures the redundancy version sequence is continuous over adjacent radio frames, and wherein the redundancy version sequence is calculated according to

$$RV_k = \left\lfloor \frac{3}{2}k \right\rfloor \bmod 4,$$

where RV_k is the redundanc[y] version sequence, $k = i \bmod 4$, $i = 0, 1, \ldots, n_s^w - 1$, and n_s^w denotes a number of subframes within the system information message transmission window.

Judicial correction of an error in a patent may be available "only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003); *see LG Elecs., Inc. v. Quanta Computer Inc.*, 566 F. Supp. 2d 910, 913 (W.D. Wis. 2008) (noting the "nearly impossible standard for judicial correction of a patent" and citing *Novo*, 350 F.3d 1348, which "refus[ed] to correct 'a' to 'and' because other possibilities for correction existed")

Plaintiff explains that, during prosecution, Claim 1 originally was amended so as to recite "one or more predetermined subframes." Dkt. No. 253-7, Sept. 28, 2011 Amendment and Presentation of Claims at 2 (CCE576-000226). Claim 1 was then amended to also recite "determining whether one or more predetermined subframes are a mixture of multi-cast subframes and unicast subframes," and at that time the disputed term was amended so as to recite "one or more *of the* predetermined subframes." *Id.*, Sept. 4, 2012 Response Under 37 C.F.R. § 1.116 at 2 (CCE576-000075). Subsequently, Claim 1 was amended so as to remove the "determining whether one or more predetermined subframes . . ." limitation, but the phrase "of the" remained in the disputed term. *Id.*, Dec. 13, 2012 Response Under 37 C.F.R. § 1.116

at 2 (CCE576-000058).[2] This prosecution history thus suggests that the disputed term should be interpreted to mean "one or more predetermined subframes."

Novo requires, however, that "the correction is not subject to reasonable debate based on consideration of the claim language and the specification," not the prosecution history. 350 F.3d at 1357. Instead, the prosecution history is considered only to determine whether it is inconsistent with what is clear from the claim language and the specification. *See id.*

On balance, Defendants have demonstrated a reasonable debate as to whether Plaintiff's proposed correction is appropriate based on consideration of the claim language and the specification. Plaintiff has argued that the claim scope would be unchanged by its proposed correction. Plaintiff's argument is undercut, however, by the inconsistency between its position during briefing and its position at the November 29, 2016 hearing. Specifically, Plaintiff argued in briefing that the disputed term requires only one predetermined subframe (*see* Dkt. No. 269 at 5), but Plaintiff argued at the November 29, 2016 hearing that it does *not* intend to assert that this limitation could be satisfied with only one predetermined subframe.

Thus, even assuming that Plaintiff's proposed correction is consistent with the prosecution history, the above-quoted first requirement for judicial correction has not been satisfied. *See Novo*, 350 F.3d at 1357.

As a result, the disputed term lacks explicit antecedent basis, and Plaintiff has not shown any implicit antecedent basis. The disputed term is therefore indefinite. *See Halliburton*, 514

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[2] At the November 29, 2016 hearing, Defendants emphasized that this December 13, 2012 Response underlined the phrase "of the." Such underlining usually indicates material that is being added by amendment. Here, however, this underlining also appears in the September 4, 2012 Response. Thus, whereas Defendants have argued that the patentee deliberately added the phrase "of the" a second time, an equally plausible explanation is that the underlining of the phrase "of the" in the September 4, 2012 Response was inadvertently carried over into the December 13, 2012 Response.

F.3d at 1249 ("a claim could be indefinite if a term does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable"); *see also Nautilus*, 134 S. Ct. at 2130 ("[W]e read [35 U.S.C.] § 112, ¶ 2 to require that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.").

Accordingly, the Court hereby finds that **"one or more of the predetermined subframes"** is **indefinite**.

F. "establish(ing) channel information with respect to the selected downlink component carrier" ('472 Patent, Claims 1, 28)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning. No construction necessary. Or, alternatively: "monitoring, evaluating, and/or collecting channel information with respect to the selected downlink component carrier"	Indefinite To the extent the Court determines that the claims are not indefinite, the term should be construed as "establish[ing] aperiodic channel information with respect to the selected downlink component carrier"

Dkt. No. 209, Ex. A at 5; *id.*, Ex. B at 7; Dkt. No. 275, Ex. A at 12 & 20.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning."

(1) The Parties' Positions

Plaintiff argues that Defendants' proposal of "aperiodic" "is contrary to the claim language and the description of the invention by the '472 patent." Dkt. No. 253 at 12.

Defendants respond that the specification uses "aperiodic" when referring to "[t]he present invention." Dkt. No. 265 at 13 (quoting '472 Patent at 1:5-7). Defendants also submit that "every disclosed embodiment requires the return of aperiodic channel information,

not periodic channel information." Dkt. No. 265 at 13.

Plaintiff replies that Defendants have not supported their statement that "[i]f, as

[Plaintiff] argues, the 'channel information' established/provided and sent in reply to the request

for aperiodic channel information is not 'aperiodic,' then the claims are ambiguous and

indefinite.'" Dkt. No. 269 at 5.

In sur-reply, Defendants argue that "[t]he claims and specification of the '472 and '262

patents confirm that 'the channel information' refers back to the same 'aperiodic channel

information' requested earlier in the claims—a fact even [Plaintiff] appears to concede." Dkt.

No. 278 at 4.

At the November 29, 2016 hearing, the parties presented oral argument as to this disputed

term together with the other disputed terms that recite "channel information."

(2) Analysis

Claim 28 of the '472 Patent, for example, recites (emphasis added):

28. A method comprising:
       receiving a request for providing *aperiodic channel information* with
respect to a selected downlink component carrier of a plurality of component
carriers;
       determining the selected downlink component carrier based on which
component carrier of the plurality of component carriers carried the request for
providing *the aperiodic channel information*;
       *establishing channel information with respect to the selected downlink
component carrier*; and
       sending *the channel information* with respect to the selected downlink
component carrier.

Plaintiff argues that the word "aperiodic" modifies "providing" rather than "channel

information." Dkt. No. 253 at 13. The word "aperiodic" is used as an adjective, not an adverb,

so at least on its face "aperiodic" appears to modify "channel information." Nonetheless,

"aperiodic" is not recited in the disputed term even though this term is responsive to the recited

"request for providing aperiodic channel information." On balance, a fair reading of the claims as a whole, particularly in the context of the specification, is that the separate recital of "aperiodic channel information" refers to the manner in which the channel information is requested. *See* '472 Patent at 1:5-7, 2:1-8, 3:7-9 ("in contrast to a periodic CSI report, an aperiodic CSI report is sent by the UE when it is triggered to do so"), 3:35-39, 3:62-63 & 5:12-15.

Therefore, the Court hereby expressly rejects Defendants' proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

Accordingly, the Court hereby construes **"establish(ing) channel information with respect to the selected downlink component carrier"** to have its **plain meaning**.

G. "the channel information" ('472 Patent, Claims 1, 10, 11, 26, 28, 55; '262 Patent, Claims 14, 29)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
No construction necessary.[3]	Indefinite To the extent the Court determines that the claims are not indefinite, the term should be construed as "the aperiodic channel information"

Dkt. No. 209, Ex. A at 5 & 9; *id.*, Ex. B at 3 & 7; Dkt. No. 275, Ex. A at 12, 14, 16, 19-21 & 25.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning."

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[3] Plaintiff previously also proposed, as an alternative: "the established channel information."
Dkt. No. 209, Ex. A at 5 & 9.

(1) The Parties' Positions

Plaintiff submits that "[t]he dispute between the parties is essentially the same as that discussed above with regard to 'establishing channel information.'" Dkt. No. 253 at 15.

Likewise, Defendants' response brief, Plaintiff's reply brief, and Defendants' sur-reply brief address this term together with "establish(ing) channel information with respect to the selected downlink component carrier," which is addressed above. *See* Dkt. No. 265 at 13-14; *see also* Dkt. No. 269 at 5-6; Dkt. No. 278 at 4.

At the November 29, 2016 hearing, the parties presented oral argument as to this disputed term together with the other disputed terms that recite "channel information."

(2) Analysis

This term presents the same dispute as presented for the term "establish(ing) channel information with respect to the selected downlink component carrier," addressed above.

Therefore, the Court hereby expressly rejects Defendants' proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

Accordingly, the Court hereby construes **"the channel information"** to have its **plain meaning**.

H. "on a component carrier for which the aperiodic channel information is provided"
('472 Patent, Claims 15, 44)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning. No construction necessary. Or, alternatively: "on a component carrier for which the aperiodic channel information is to be provided"	Indefinite

Dkt. No. 209, Ex. A at 5-6; *id.*, Ex. B at 4; Dkt. No. 275, Ex. A at 17 & 21.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "on a component carrier for which the aperiodic

channel information is to be provided."

(1) The Parties' Positions

Plaintiff argues that "[a] basic understanding of the invention is all that is required to

understand the meaning of this disputed claim limitation." Dkt. No. 253 at 16.

Defendants respond that "the claims require the base station to both request and provide

the same channel information, which is technically and logically impossible." Dkt. No. 265

at 14. Defendants also submit that "the prosecution history of the '472 patent and

the related '262 patent indicates that the language in claims 15 and 44 was an intentional choice

by the patentee and that choice should not be altered by the Court." *Id.* at 15.

Plaintiff replies that "Defendants' interpretation, requiring the base station to both request

and provide the same channel information, is neither the only interpretation of this limitation, nor

is it a *reasonable* interpretation." Dkt. No. 269 at 6. "Instead," Plaintiff argues, "the only

reasonable interpretation is that the request for providing aperiodic channel information is sent

on a component carrier as identification of the component carrier for which the request pertains

(i.e., is to be provided)." *Id.*

In sur-reply, Defendants argue that "[w]hat [Plaintiff] is essentially arguing is that 'is

provided' should be changed to 'is to be provided' because the claims would not make sense

otherwise." Dkt. No. 278 at 4.

At the November 29, 2016 hearing, the parties presented oral argument as to this disputed

term together with the other disputed terms that recite "channel information."

(2) Analysis

Claims 15 and 44 of the '472 Patent recite (emphasis added):

15. An apparatus comprising:
    a processor configured to generate a request for providing aperiodic
channel information with respect to a selected downlink component carrier of a
plurality of component carriers; and
    a sender configured to send the request for providing the aperiodic channel
information *on a component carrier for which the aperiodic channel information
is provided*.

* * *

44. A method comprising:
    generating a request for providing aperiodic channel information with
respect to a selected downlink component carrier of a plurality of component
carriers; and
    sending the request for providing the aperiodic channel information *on a
component carrier for which the aperiodic channel information is provided*.

The context of these claims is sufficiently clear that requests are sent using the

component carrier for which channel information is requested, and the specification supports

such a reading. *See* '472 Patent at 5:22-33 & 10:11-13. Indeed, Claims 1, 16, and 31 of the

continuation '262 Patent recite "is to be provided." As to Defendants' arguments regarding

technical and logical impossibility, what is recited as being sent is not "the aperiodic channel

information" but rather is "the *request* for providing the aperiodic channel information." Finally,

although Defendants submit that originally during prosecution there was a claim that recited "is

to be provided," Defendants have not shown that the patentee specifically deleted the phrase "to

be" in the claims of the '472 Patent here at issue or that any estoppel or disclaimer applies. *See*

Dkt. No. 265 at 15-16; *see also id.* at Exs. 2-4. Therefore, the Court hereby expressly rejects

Defendants' indefiniteness arguments, and as a result, construction is appropriate to assist the

finder of fact in these regards.

Therefore, the Court hereby construes **"on a component carrier for which the**

aperiodic channel information is provided" to mean **"on a component carrier for which the**

aperiodic channel information is to be provided."

I. "processor [is] configured to . . ." ('472 Patent)

"a processor configured to: determine the selected downlink component carrier based on which component carrier of the plurality of component carriers carried the request for providing the aperiodic channel information" (Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): Function: determine the selected downlink component carrier based on which component carrier of the plurality of component carriers carried the request for providing the aperiodic channel information. Structure: "a processor"	Indefinite Governed by 35 U.S.C. § 112, ¶6. Function: "determine the selected downlink component carrier based on which component carrier of the plurality of component carriers carried the request for providing the aperiodic channel information" Structure: no corresponding structure (algorithm) disclosed

"a processor configured to . . . establish channel information with respect to the selected downlink component carrier" (Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
   Function: establish channel information with respect to the selected downlink component carrier.
   Structure: "a processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "establish channel information with respect to the selected downlink component carrier"
	
	Structure: no corresponding structure (algorithm) disclosed

"wherein the processor is configured to provide channel information for at least one of the other component carriers of the plurality of component carriers other than the selected downlink component carrier" (Claim 10)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
   Function: provide channel information for at least one of the other component carriers of the plurality of component carriers other than the selected downlink component carrier.
   Structure: "a processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "provide channel information for at least one of the other component carriers of the plurality of component carriers other than the selected downlink component carrier"
	
	Structure: no corresponding structure (algorithm) disclosed

"a processor configured to generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers" (Claim 15)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers.
    Structure: "a processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers"
	
	Structure: no corresponding structure (algorithm) disclosed

"wherein the processor is configured to generate a request for providing channel information for at least one of the other component carriers of the plurality of component carriers other than the selected component carrier" (Claim 25)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: generate a request for providing channel information for at least one of the other component carriers of the plurality of component carriers other than the selected component carrier.
    Structure: "a processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "generate a request for providing channel information for at least one of the other component carriers of the plurality of component carriers other than the selected component carrier"
	
	Structure: no corresponding structure (algorithm) disclosed

"wherein the processor is configured to include the request for providing the aperiodic channel information in an uplink grant" (Claim 27)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Not governed by 35 U.S.C. § 112, ¶6.	Indefinite
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):	Governed by 35 U.S.C. § 112, ¶6.
Function: include the request for providing the aperiodic channel information in an uplink grant.	Function: "include the request for providing the aperiodic channel information in an uplink grant"
Structure: a processor	Structure: no corresponding structure (algorithm) disclosed

Dkt. No. 209, Ex. A at 6-9; *id.*, Ex. B at 5-7; Dkt. No. 275, Ex. A at 13-17.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "Not governed by 35 U.S.C. § 112, ¶ 6. Plain

meaning."

(1) The Parties' Positions

Plaintiff argues that "[b]ecause, in each case, the term 'processor,' which itself connotes

structure, is coupled to claim language describing the operation of the processor, the term

'processor' would be understood by persons of ordinary skill in the art to have a sufficiently

definite meaning as the name for structure." Dkt. No. 253 at 22.

Defendants respond that these are means-plus-function terms because "[w]hile a

processor may be understood by one of skill in the art to be part of a generic computer, that alone

is insufficient structure for performing the claimed functions, as a general-purpose processor

cannot perform the recited functions unless it is programmed with an algorithm for doing so."

Dkt. No. 265 at 21. Further, Defendants urge that Plaintiff and its expert have failed to identify

any relevant interactions with other components. Dkt. No. 303 at 4-5. As to corresponding structure, Defendants argue that the disclosures cited by Plaintiff "merely parrot back the same functional language found in the claims, rather than disclosed [*sic*] algorithms for how to perform the functions." Dkt. No. 265 at 25-26.

Plaintiff replies that "the proper inquiry is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." Dkt. No. 269 at 7. Plaintiff also argues that Defendants fail to consider the entire claim limitations as a whole. *Id.* at 8. Further, Plaintiff submits: "Under Defendants' purported test, any apparatus claimed in a functional manner would fall under § 112 ¶6 if it did not recite an algorithm in the claim, regardless of any structure recited in the claim." *Id.* Finally, Plaintiff argues that "[t]he specialized nature of the recited components, and the manner in which they would be implemented in a UE [user equipment] or eNode-B would be recognized by a person of ordinary skill in the art." *Id.* at 9.

In sur-reply, Defendants reiterate that these terms "recite general purpose computer components that do not connote sufficiently definite structure to one of ordinary skill in the art." Dkt. No. 278 at 6; *see id.* at 6-9.

The parties have submitted these disputed terms on the briefing, without oral argument.

(2) Analysis

Title 35 U.S.C. § 112(f) (previously § 112, ¶ 6) provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

"[T]he failure to use the word 'means' . . . creates a rebuttable presumption . . . that § 112, para. 6 does not apply." *Williamson v. Citrix Online LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (citations and internal quotation marks omitted). "When a claim term lacks the word 'means,' the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Id.* at 1349 (citations and internal quotation marks omitted).

Williamson, in an *en banc* portion of the decision, abrogated prior statements that the absence of the word "means" gives rise to a "strong" presumption against means-plus-function treatment. *Id.* (citation omitted). *Williamson* also abrogated prior statements that this presumption "is not readily overcome" and that this presumption cannot be overcome "without a showing that the limitation essentially is devoid of anything that can be construed as structure." *Id.* (citations omitted). Instead, *Williamson* found, "[h]enceforth, we will apply the presumption as we have done prior to *Lighting World* . . . ." *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004)). In a subsequent part of the decision not considered *en banc*, *Williamson* affirmed the district court's finding that the term "distributed learning control module" was a means-plus-function term that was indefinite because of lack of corresponding structure, and in so doing *Williamson* stated that "'module' is a well-known nonce word." 792 F.3d at 1350.

Here, "processor" is not a "nonce" term (*see id.*) but rather connotes a class of structures. In reaching this conclusion, the Court applies substantially the same analysis that the Court applied in *Syncpoint Imaging, LLC v. Nintendo of America Inc.*, No. 2:15-CV-247, 2016 WL 55118, at *18-*21 (E.D. Tex. Jan. 5, 2016). In particular, the Court hereby expressly rejects

Defendants' argument that "the 'processor configured' terms fail to recite sufficient structure because no algorithm is recited in the claims to perform the recited functions." Dkt. No. 265 at 23; *see Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) ("where a claim is not drafted in means-plus-function format, the reasoning in the *Aristocrat* line of cases does not automatically apply, and an algorithm is therefore not necessarily required") (discussing *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328 (Fed. Cir. 2008)). Also of note, Defendants' own brief goes on to state that: "the claimed processor here is not being used to perform a generic function for which no specific algorithm is necessary (*e.g.*, unspecified 'processing'). Rather, *the claims expressly recite the specific (i.e., non-generic) algorithms*." Dkt. No. 265 at 24 (emphasis added).

In so finding, the Court applies long-standing principles articulated prior to the abrogated *Lighting World* decision. *See, e.g., Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004) ("when the structure-connoting term 'circuit' is coupled with a description of the circuit's operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and § 112 ¶ 6 presumptively will not apply"; noting "language reciting [the circuits'] respective objectives or operations"); *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003) ("While we do not find it necessary to hold that the term 'circuit' by itself always connotes sufficient structure, the term 'circuit' with an appropriate identifier such as 'interface,' 'programming' and 'logic,' certainly identifies some structural meaning to one of ordinary skill in the art."); *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 705 (Fed. Cir. 1998) ("Even though the term 'detector' does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as 'detectors.' We therefore conclude that the term 'detector' is a

sufficiently definite structural term to preclude the application of § 112, ¶ 6."); *Greenberg v.*

Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) (finding that "detent

mechanism" was not a means-plus-function term because it denotes a type of device with a

generally understood meaning in the mechanical arts)[4]; *Affymetrix, Inc. v. Hyseq, Inc.*, 132 F.

Supp. 2d 1212, 1232 (N.D. Cal. 2001) (finding that "'computer code' is not a generic term, but

rather recites structure that is understood by those of skill in the art to be a type of device for

accomplishing the stated functions").

Finally, although Defendants have cited *St. Isidore Research, LLC v. Comerica Inc.*,

No. 2:15-CV-1390, 2016 WL 4988246, at *14 (E.D. Tex. Sept. 19, 2016), in which the Court

found certain "processor" terms to be means-plus-function terms, here the disputed terms set

forth detail regarding the operations of the "processors." *See, e.g., Linear Tech.*, 379 F.3d

at 1320. Also of note, "[t]he amount of detail required to be included in claims depends on the

particular invention and the prior art." *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376,

1385 (Fed. Cir. 2011) (citation and internal quotation marks omitted).

In sum, Defendants have failed to overcome the presumption against means-plus-function

treatment for these non-means terms. Therefore, the Court hereby expressly rejects Defendants'

proposals of means-plus-function treatment, as well as Defendants' corresponding indefiniteness

arguments. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also*

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[4] *Greenberg*, 91 F.3d at 1583 ("'detent' denotes a type of device with a generally understood
meaning in the mechanical arts, even though the definitions are expressed in functional terms");
id. ("It is true that the term 'detent' does not call to mind a single well-defined structure, but the
same could be said of other commonplace structural terms such as 'clamp' or 'container.' What
is important is not simply that a 'detent' or 'detent mechanism' is defined in terms of what it
does, but that the term, as the name for structure, has a reasonably well understood meaning in
the art.")

O2 Micro, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*,

802 F.3d at 1291.

Accordingly, the Court hereby construes the disputed **"processor [is] configured to . . ."**

terms in the '472 Patent to have their **plain meaning**.

J. "processor [is further] configured to . . ." ('262 Patent)

"a processor configured to generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of noncontiguous component carriers" (Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Not governed by 35 U.S.C. § 112, ¶6.	Indefinite

To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of non-contiguous component carriers.
    Structure: "a processor"
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of non-contiguous component carriers"
	
	Structure: no corresponding structure (algorithm) disclosed

"wherein the processor is further configured to include the request for providing the aperiodic channel information in an uplink grant" (Claim 10)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: include the request for providing the aperiodic channel information in an uplink grant.
        Structure: "a processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "include the request for providing the aperiodic channel information in an uplink grant"
	
	Structure: no corresponding structure (algorithm) disclosed

"wherein the processor is further configured to generate a request for providing channel information for at least one of the other component carriers of the plurality of noncontiguous component carriers other than the selected component carrier" (Claim 13)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: generate a request for providing channel information for at least one of the other component carriers of the plurality of non-contiguous component carriers other than the selected component carrier.
        Structure: "a processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "generate a request for providing channel information for at least one of the other component carriers of the plurality of non-contiguous component carriers other than the selected component carrier"
	
	Structure: no corresponding structure (algorithm) disclosed

Dkt. No. 209, Ex. A at 10-11; *id.*, Ex. B at 7-9; Dkt. No. 275, Ex. A at 22-24.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "Not governed by 35 U.S.C. § 112, ¶ 6. Plain

meaning."

(1) The Parties' Positions

Plaintiff argues that "[t]he disputed 'processor' claim limitations of the '262 patent are substantially the same as the 'processor' limitations found in the '472 patent that were discussed above." Dkt. No. 253 at 24.

Defendants' response brief, Plaintiff's reply brief, Defendants' sur-reply brief, and the parties' supplemental briefs address these terms together with the "processor [is] configured to . . ." terms in the '472 Patent, addressed above. *See* Dkt. No. 265 at 13-14; *see also* Dkt. No. 269 at 7-10; Dkt. No. 278 at 6-10; Dkt. No. 303 at 4-5; Dkt. No. 307 at 4-5.

The parties submitted these disputed terms on the briefing, without oral argument.

(2) Analysis

These disputed terms in the '262 Patent present substantially the same issues as the "processor [is] configured" terms in the '472 Patent, which are addressed above.

Thus, Defendants have failed to overcome the presumption against means-plus-function treatment for these non-means terms. Therefore, the Court hereby expressly rejects Defendants' proposals of means-plus-function treatment, as well as Defendants' corresponding indefiniteness arguments. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

Accordingly, the Court hereby construes the disputed **"processor [is further] configured to . . ."** terms in the '262 Patent to have their **plain meaning**.

K. "memory including software . . ." ('676 Patent, Claim 19)

"memory including software . . . configured, with the at least one processor, to cause the apparatus to at least: determine that a set of at least one triggering criterion is met"	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: determine that a set of at least one triggering criterion is met.
    Structure: "memory including software and at least one processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "determine that a set of at least one triggering criterion is met"
	
	Structure: no corresponding structure disclosed

"memory including software . . . configured, with the at least one processor, to cause the apparatus to at least . . . provide a power control headroom report on an uplink from user equipment, in response to the set having been met"	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**

Not governed by 35 U.S.C. § 112, ¶6.
 	
To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6):
    Function: provide a power control headroom report on an uplink from user equipment, in response to the set having been met.
    Structure: "memory including software and at least one processor"
	Indefinite
	
	Governed by 35 U.S.C. § 112, ¶6.
	
	Function: "provide a power control headroom report on an uplink from user equipment, in response to the set having been met"
	
	Structure: no corresponding structure (algorithm) disclosed

Dkt. No. 209, Ex. A at 2; *id.*, Ex. B at 1-2; Dkt. No. 275, Ex. A at 4-5.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties

with the following preliminary construction: "Not governed by 35 U.S.C. § 112, ¶ 6. Plain

meaning."

(1) The Parties' Positions

Plaintiff argues that these terms "recite structure in the form of memory, software, and a processor." Dkt. No. 253 at 26.

Defendants respond that these are means-plus-function terms because "they recite only functional claim language and generic computer components—*e.g.*, 'memory' and 'processor.'" Dkt. No. 265 at 26. Defendants also argue that "[w]hereas the claimed functional limitations require structures capable of analyzing radio transmission, the only structures recited within the claim are general purpose computer components (*i.e.*, memory, software, and processor) that are not capable of performing the recited functions unless they are programmed with algorithms for doing so." *Id.* at 27. As to corresponding structure, Defendants argue that "the specification merely recites these claimed functions without further description." *Id.* at 28.

Plaintiff's reply brief and Defendants' sur-reply brief address this term together with the "processor [is] configured" terms in the '472 Patent, addressed above. *See* Dkt. No. 269 at 7-10; *see also* Dkt. No. 278 at 6-10.

The parties have submitted these disputed terms on the briefing, without oral argument.

(2) Analysis

These disputed terms present substantially the same issues as the "processor [is] configured" terms in the '472 Patent, addressed above. Moreover, the "memory" and "software" provide additional structure. *See, e.g.,* '676 Patent at 5:63-6:3. Defendants' argument that the claimed functions require "processing and analyzing radio transmissions" (Dkt. No. 265 at 27), even if accepted as relevant, is unavailing. Further, to whatever extent these structural terms are deemed insufficient on their own, Claim 19 of the '676 Patent itself discloses additional detail regarding operations and algorithms (emphasis added):

19. An apparatus comprising:
    at least one processor; and
    at least one memory including software, where the at least one memory and the software are configured, with the at least one processor, to cause the apparatus to at least:
        determine that a set of at least one triggering criterion is met; and
        provide a power control headroom report on an uplink from user equipment, in response to the set having been met,
        wherein said at least one triggering criterion include at least one threshold having been reached, wherein said at least one threshold is adjustable via a signal to the apparatus, wherein the set of at least one triggering criterion comprises a criterion being met based on reaching a threshold of the at least one threshold of k transmission time intervals following a previous power control headroom report, wherein k is an integer and wherein said at least one threshold adjustable via the signal comprises adjusting the threshold integer k.

Thus, Defendants have failed to overcome the presumption against means-plus-function treatment for these non-means terms. Therefore, the Court hereby expressly rejects Defendants' proposals of means-plus-function treatment, as well as Defendants' corresponding indefiniteness arguments. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

Accordingly, the Court hereby construes **"memory including software . . . configured, with the at least one processor, to cause the apparatus to at least: determine that a set of at least one triggering criterion is met"** and **"memory including software . . . configured, with the at least one processor, to cause the apparatus to at least . . . provide a power control headroom report on an uplink from user equipment, in response to the set having been met"** to have their **plain meaning**.

L. "redundancy version signaling module configured to detect start of a system information message transmission window and to assign a redundancy version sequence at the start of the transmission window" ('022 Patent, Claim 6)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Not governed by 35 U.S.C. § 112, ¶6. To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6): 　　Function: detect start of a system information message transmission window and assigning a redundancy version sequence at the start of the transmission window 　　Structure: "a system combining one or more processors (including DSPs, ASICs, FPGAs, etc.), memory, and software, and equivalents thereof"[5]	Indefinite Governed by 35 U.S.C. § 112, ¶6. Function: "detect start of a system information message transmission window and to assign a redundancy version sequence at the start of the transmission window" Structure: no corresponding structure disclosed

Dkt. No. 209, Ex. B at 1; Dkt. No. 275, Ex. A at 3.

Shortly before the start of the November 29, 2016 hearing, the Court provided the parties with the following preliminary construction: "Not governed by 35 U.S.C. § 112, ¶ 6. Plain meaning."

(1) The Parties' Positions

Plaintiff argues that "[t]he claim language itself imparts structure on the RV signaling module." Dkt. No. 253 at 29.

Defendants respond that "module" is a "nonce" word and that the prefix "redundancy version signaling" does not impart any structural meaning. Dkt. No. 265 at 18. Defendants submit that "[Plaintiff's] reliance upon the module's recited functions confirms that there is no

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[5] Plaintiff previously proposed: "Not governed by 35 U.S.C. § 112(6). To the extent this limitation is determined to be governed by 35 U.S.C. § 112(6), the corresponding structure is: 'software, hardware, firmware, or a combination thereof,' performing the function of: detect start of a system information message transmission window and assigning a redundancy version sequence at the start of the transmission window." Dkt. No. 209, Ex. A at 1-2.

language in the claim that provides sufficiently definite structure for the recited module." *Id.*

Further, Defendants urge that Plaintiff and its expert have failed to identify any relevant

interactions with other components. Dkt. No. 303 at 4-5. Finally, Defendants argue that "[t]he

specification of the '022 patent fails to disclose any algorithm that may be used to perform the

claimed functions . . . ." Dkt. No. 265 at 20.

Plaintiff's reply brief and Defendants' sur-reply brief address this term together with the

"processor [is] configured" terms in the '472 Patent, addressed above. *See* Dkt. No. 269 at 7-10;

see also Dkt. No. 278 at 6-10.

(2) Analysis

Legal principles regarding whether 35 U.S.C. § 112, ¶ 6 applies are discussed above as to

the "processor [is] configured" terms in the '472 Patent.

The disputed term recites a "redundancy version signaling module" that performs

particular functions, and *Williamson* found that "module" is a "nonce" word that generally does

not connote structure. 792 F.3d at 1350.

Nonetheless, in some circumstances, "the presence of modifiers can change the meaning

of 'module'" so as to connote structure. *Id.* at 1351. Further, Claim 6 of the '022 Patent, in

which the disputed term appears, itself recites structure in the form of operations and algorithms

(emphasis added):

> 6. An apparatus comprising:
>   a redundancy version signaling module configured to detect start of a
> system information message transmission window and to assign a redundancy
> version sequence at the start of the transmission window, *wherein* the assignment
> includes excluding one or more of the predetermined subframes in even-
> numbered radio frames if the subframes are within the transmission window, and
> *wherein* the assignment includes excluding uplink subframes and multi-cast
> subframes,

> *wherein* the assignment ensures the redundancy version sequence is continuous over adjacent radio frames, and *wherein* the redundancy version sequence is calculated according to
>
> $$RV_k = \left\lceil \frac{3}{2} k \right\rceil \bmod 4,$$
>
> where RV_k is the redundanc[y] version sequence k=i mod 4, i=0,1, . . . , i=0,1, . . . , $n_s^w - 1$, and n_s^w denotes a number of subframes within the system information message transmission window.

Thus, nearly the entirety of the claim provides structural meaning to the "redundancy version signaling module," particularly as to the "assign[ing]" function. The function of "detect[ing]" is relatively less complex, and it is noteworthy that "[t]he amount of detail required to be included in claims depends on the particular invention and the prior art." *Typhoon Touch*, 659 F.3d at 1385 (citation and internal quotation marks omitted). On balance, Defendants have failed to overcome the presumption against means-plus-function treatment for these non-means terms. Therefore, the Court hereby expressly rejects Defendants' proposal of means-plus-function treatment, as well as Defendants' corresponding indefiniteness argument. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

Accordingly, the Court hereby construes **"redundancy version signaling module configured to detect start of a system information message transmission window and to assign a redundancy version sequence at the start of the transmission window"** to have its **plain meaning**.

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit.

As discussed above, the Court finds that the term "when applicable" in Claims 4 and 10 of the '957 Patent is indefinite.

As discussed above, the Court finds that the term "the apparatus" in Claims 7-9 of the '957 Patent is indefinite.

As discussed above, the Court finds that the term "one or more of the predetermined subframes" in Claims 1 and 6 of the '022 Patent is indefinite.

The parties are ordered to not refer to each other's claim construction positions in the presence of the jury. Likewise, in the presence of the jury, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court. The Court's reasoning in this order binds the testimony of any witnesses, and any reference to the claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 18th day of December, 2016.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE

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APPENDIX A

Term	Parties' Agreement
"bitmap indicating power headroom reports being reported" ('590 Patent, Claims 1, 5) "a bitmap that indicates power headroom reports being reported" ('590 Patent, Claim 9)	"a collection of bits arranged to indicate which power headroom reports are being reported"
"bitmap" ('590 Patent, Claims 1, 2, 5, 6, 9, 10)	"a collection of bits"

Dkt. No. 209 at 2.